

In the
United States Court of Appeals
For the Seventh Circuit

No. 00-1681

UNITED STATES OF AMERICA,

Plaintiff-Appellee,

v.

MATTHEW R. LANGE,

Defendant-Appellant.

Appeal from the United States District Court
for the Eastern District of Wisconsin.
No. 99-CR-174—**J.P. Stadtmueller**, *Judge*.

ARGUED SEPTEMBER 14, 2000—DECIDED NOVEMBER 26, 2002

Before CUDAHY, EASTERBROOK, and RIPPLE, *Circuit Judges*.

EASTERBROOK, *Circuit Judge*. Matthew Lange has been convicted of violating 18 U.S.C. §1832, part of the Economic Espionage Act of 1996. This statute makes it a felony to sell, disseminate, or otherwise deal in trade secrets, or attempt to do so, without the owner's consent. Lange stole computer data from Replacement Aircraft Parts Co. (RAPCO), his former employer, and attempted to sell the data to one of RAPCO's competitors. He allows that his acts violated §1832, if the data contained "trade secrets," but denies that the data met the statutory definition:

the term "trade secret" means all forms and types of financial, business, scientific, technical, econom-

ic, or engineering information, including patterns, plans, compilations, program devices, formulas, designs, prototypes, methods, techniques, processes, procedures, programs, or codes, whether tangible or intangible, and whether or how stored, compiled, or memorialized physically, electronically, graphically, photographically, or in writing if—(A) the owner thereof has taken reasonable measures to keep such information secret; and (B) the information derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable through proper means by, the public[.]

18 U.S.C. §1839(3). Lange’s appeal requires us to apply this definition.

RAPCO is in the business of making aircraft parts for the aftermarket. It buys original equipment parts, then disassembles them to identify (and measure) each component. This initial step of reverse engineering, usually performed by a drafter such as Lange, produces a set of measurements and drawings. See generally Pamela Samuelson & Suzanne Scotchmer, *The Law and Economics of Reverse Engineering*, 111 Yale L.J. 1575, 1582-94 (2002). Because this case involves an effort to sell the intellectual property used to make a brake assembly, we use brakes as an illustration.

Knowing exactly what a brake assembly looks like does not enable RAPCO to make a copy. It must figure out how to make a substitute with the same (or better) technical specifications. Brakes rely on friction to slow the airplane’s speed by converting kinetic energy to heat. Surfaces that do this job well are made by sintering—the forming of solid metal, usually from a powder, without melting. Aftermarket manufacturers must experiment with different alloys and compositions until they achieve a

process and product that fulfils requirements set by the Federal Aviation Administration for each brake assembly. Completed assemblies must be exhaustively tested to demonstrate, to the FAA's satisfaction, that all requirements have been met; only then does the FAA certify the part for sale. For brakes this entails 100 destructive tests on prototypes, bringing a spinning 60-ton wheel to a halt at a specified deceleration measured by a dynamometer. Further testing of finished assemblies is required. It takes RAPCO a year or two to design, and obtain approval for, a complex part; the dynamometer testing alone can cost \$75,000. But the process of experimenting and testing can be avoided if the manufacturer demonstrates that its parts are identical (in composition and manufacturing processes) to parts that have already been certified. What Lange, a disgruntled former employee, offered for sale was all the information required to obtain certification of several components as identical to parts for which RAPCO held certification. Lange included with the package—which he offered via the Internet to anyone willing to pay his price of \$100,000—a pirated copy of AutoCAD®, the computer-assisted drawing software that RAPCO uses to maintain its drawings and specifications data. One person to whom Lange tried to peddle the data informed RAPCO, which turned to the FBI. Lange was arrested following taped negotiations that supply all the evidence necessary for conviction—if the data satisfy the statutory definition of trade secrets.

One ingredient of a trade secret is that “the owner thereof has taken reasonable measures to keep such information secret”. Lange contends that the proof fell short, but a sensible trier of fact (in this bench trial, the district judge) could have concluded that RAPCO took “reasonable measures to keep [the] information secret”. RAPCO stores all of its drawings and manufacturing data in its CAD room, which is protected by a special lock, an alarm system, and

a motion detector. The number of copies of sensitive information is kept to a minimum; surplus copies are shredded. Some information in the plans is coded, and few people know the keys to these codes. Drawings and other manufacturing information contain warnings of RAPCO's intellectual-property rights; every employee receives a notice that the information with which he works is confidential. None of RAPCO's subcontractors receives full copies of the schematics; by dividing the work among vendors, RAPCO ensures that none can replicate the product. This makes it irrelevant that RAPCO does not require vendors to sign confidentiality agreements; it relies on *deeds* (the splitting of tasks) rather than *promises* to maintain confidentiality. Although, as Lange says, engineers and drafters knew where to get the key to the CAD room door, keeping these employees out can't be an ingredient of "reasonable measures to keep [the] information secret"; then no one could do any work. So too with plans sent to subcontractors, which is why dissemination to suppliers does not undermine a claim of trade secret. See *Rockwell Graphic Systems, Inc. v. DEV Industries, Inc.*, 925 F.2d 174, 177 (7th Cir. 1991).

The second ingredient is that "the information derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable through proper means by, the public[.]" According to Lange, all data obtained by reverse engineering some other product are "readily ascertainable . . . by the public" because everyone can do what RAPCO did: buy an original part, disassemble and measure it, and make a copy. The prosecutor responds to this contention by observing that "the public" is unable to reverse engineer an aircraft brake assembly.

The prosecutor's assumption is that the statutory reference in §1839(3) to "the public" means the *general* public—the man in the street. Ordinary people don't

have AutoCAD and 60-ton flywheels ready to hand. But is the general public the right benchmark? The statute itself does not give an answer: the word “public” could be preceded implicitly by “general” as the prosecutor supposes, but it also could be preceded implicitly by “educated” or “economically important” or any of many other qualifiers. Once we enter the business of adding words to flesh out the statute—and even the addition of “general” to “public” does this—it usually is best to ask what function the law serves. In criminal cases it also is important to inquire whether the unelaborated text is ambiguous, because if it is the language should be read to prevent surprises. That’s the function of the Rule of Lenity. See *Staples v. United States*, 511 U.S. 600, 619 (1994). Some elaboration is needed. Although the third circuit assumed in *United States v. Hsu*, 155 F.3d 189, 196 (3d Cir. 1998), that “general” belongs in front of “public,” it did not explain why (nor was this important to, or a part of, *Hsu*’s holding). Commentators disagree about who “the public” includes. Compare Geraldine Szott Moohr, *The Problematic Role of Criminal Law in Regulating the Use of Information: The Case of the Economic Espionage Act*, 80 N.C. L. Rev. 853, 878-79 (2002), with Arthur J. Schwab & David J. Porter, *Guarding the Crown Jewels: A Guide to Protecting Your Trade Secrets* 85-86 (2002). It is therefore worth a look—though it turns out not to be dispositive here, any more than it was in *Hsu*.

A problem with using the general public as the reference group for identifying a trade secret is that many things unknown to the public at large are well known to engineers, scientists, and others whose intellectual property the Economic Espionage Act was enacted to protect. This makes the general public a poor benchmark for separating commercially valuable *secrets* from obscure (but generally known) information. Suppose that Lange had offered to sell Avogadro’s number for \$1. Avogadro’s number, $6.02 \times 10_{23}$, is the number of molecules per mole

of gas. It is an important constant, known to chemists since 1909 but not to the general public (or even to all recent graduates of a chemistry class). We can't believe that Avogadro's number could be called a trade secret. Other principles are known without being comprehended. Most people know that $E = mc^2$, but a pop quiz of the general public would reveal that they do not understand what this *means* or how it can be used productively.

One might respond that the context of the word "public" addresses this concern. The full text of §1839(3)(B) is: "the information derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable through proper means by, the public". Avogadro's number and other obscure knowledge is not "generally known to" the man in the street but might be deemed "readily ascertainable to" this hypothetical person. It appears in any number of scientific handbooks. Similarly one can visit a library and read Einstein's own discussion of his famous equation. See Albert Einstein, *Relativity: The Special and General Theory* (1920). Members of the general public can ascertain even abstruse information, such as Schrödinger's quantum field equation, by consulting people in the know—as members high school dropouts can take advantage of obscure legal rules by hiring lawyers. But this approach uses the phrase "readily available" to treat the "general public" *as if* it were more technically competent, which poses the question whether it would be better to use a qualifier other than "general" in the first place.

Section 1839(3) was derived from the definition of a trade secret in the Uniform Trade Secrets Act, which many states have adopted. Section 1(4) of the Uniform Act provides:

"Trade secret" means information, including a formula, pattern, compilation, program, device, method, technique, or process, that:

(i) derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use, and

(ii) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

Section 1839(3)(B) replaces “persons who can obtain economic value from its disclosure or use” with “the public”. The prosecutor believes that the substitution supports the conclusion that Congress referred to the *general* public. Yet one could say instead that “the public” is shorthand for the longer phrase, which then would be read as “the *economically relevant* public”—that is, the persons whose ignorance of the information is the source of its economic value. Let us recur to the statutory context of “the public”:

the information derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable through proper means by, the public[.]

Section 1839(3)(B) as a whole refers to the source of economic value—that the information is not known to or easily discoverable by persons who could use it productively. To make this work, either the phrase “readily ascertainable” or the phrase “the public” must be understood to concentrate attention on either potential users of the information, or proxies for them (which is to say, persons who have the same ability to “ascertain” the information). And for purposes of this case those people would be engineers and manufacturers of aircraft parts, who have ample means to reverse engineer their competitors’ products. It is by keeping secrets from its rivals that RAPCO captures the returns of its design and testing work. Thus it is unnecessary here to decide whether “gen-

eral” belongs in front of “public”—for even if it does, the economically valuable information is not “readily ascertainable” to the general public, the educated public, the economically relevant public, or any sensible proxy for these groups.

Another line of prosecutorial argument starts with the fact that §1832(a)(4) makes it a crime to attempt to sell trade secrets without the owner’s permission. Even if Lange did not have real trade secrets in his possession, the argument goes, he *thought* he did and therefore may be penalized for an attempted sale. The argument finds support in *Hsu*, which held that in order to avoid graymail—the threat that to obtain a conviction the prosecutor must disclose the secret by putting it in the trial record—a case may be based on §1832(a)(4) without disclosing all details of the trade secret. Accord, *United States v. Pin Yen Yang*, 281 F.3d 534, 543-44 (6th Cir. 2002). We agree with the general approach of these decisions. *Hsu* analogized the attempted sale of information believed to be a trade secret to an attempt such as shooting a corpse, believing it to be alive, or selling sugar, believing it to be cocaine. Events of this sort underlie the maxim that factual impossibility is no defense to a prosecution for attempt. See *United States v. Bailey*, 227 F.3d 792, 797 (7th Cir. 2000); *United States v. Saunders*, 166 F.3d 907, 916 (7th Cir. 1999); *United States v. Cotts*, 14 F.3d 300, 307 (7th Cir. 1994). This does not mean, however, that the defendant’s belief *alone* can support a conviction. All attempt prosecutions depend on demonstrating that the defendant took a substantial step toward completion of the offense, which could have been carried out unless thwarted. *Braxton v. United States*, 500 U.S. 344 (1991). Although the American Law Institute recommends a definition of attempt linked closely to intent, *Model Penal Code* §5.01(1)(c), the Supreme Court has not embraced this view and demands in cases under

federal law that the prosecutor establish a probability of success. See, e.g., *Spectrum Sports, Inc. v. McQuillan*, 506 U.S. 447 (1993) (“dangerous probability” of success is an ingredient of attempted monopolization).

An attempted murder may be thwarted by substituting a sack of flour for the intended victim; a sale of drugs may be thwarted by substituting sugar for cocaine, or rock candy for crack. These situations present a good chance of success, but for the intervention. So does “the disgruntled former employee who walks out of his former company with a computer diskette full of engineering schematics” (*Hsu*, 155 F.3d at 201)—a fair description of Lange’s conduct (though diskettes are obsolete). See also *United States v. Martin*, 228 F.3d 1, 10-12 (1st Cir. 2000). A sale of trade secrets may be thwarted by substituting a disk with the collected works of Shakespeare for the disk that the defendant believed contained the plans for brake assemblies, or by an inadvertent failure to download the proper file. The attempted sale of the disk is a culpable substantial step. But it is far less clear that sale of information already known to the public could be deemed a substantial step toward the offense, just because the defendant is deluded and does not understand what a trade secret is. Selling a copy of *Zen and the Art of Motorcycle Maintenance* is not attempted economic espionage, even if the defendant thinks that the tips in the book are trade secrets; nor is sticking pins in voodoo dolls attempted murder. Booksellers and practitioners of the occult pose no social dangers, certainly none of the magnitude of those who are tricked into shooting bags of sand that have been substituted for targets of assassination. Lange was more dangerous than our bookseller but much less dangerous than our hypothetical assassin. Perhaps data purloined from an ex-employer is sufficiently *likely* to contain trade secrets to justify calling the preparation for sale a substantial step toward

completion of the offense, and thus a culpable attempt, even if the employee stole the wrong data file and did not get his hands on the commercially valuable information. We need not pursue the subject beyond noting the plausibility of the claim and its sensitivity to the facts—what kind of data did the employee think he stole, and so on. For it is not necessary to announce a definitive rule about how dangerous the completed acts must be in trade secret cases: the judge was entitled to (and did) find that Lange had *real* trade secrets in his possession.

Lange wants us to proceed as if all he tried to sell were measurements that anyone could have taken with calipers after disassembling an original-equipment part. Such measurements could not be called trade secrets if, as Lange asserts, the assemblies in question were easy to take apart and measure. But no one would have paid \$100,000 for metes and bounds, while Lange told his customers that the data on offer were worth more than that asking price. Which they were. What Lange had, and tried to sell, were the completed specifications and engineering diagrams that reflected all the work completed *after* the measurements had been taken: the metallurgical data, details of the sintering, the results of the tests, the plans needed to produce the finished goods, everything required to get FAA certification of a part supposedly identical to one that had been approved. Those details “derive[d] independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable through proper means by, the public[.]” Every firm other than the original equipment manufacturer and RAPCO had to pay dearly to devise, test, and win approval of similar parts; the details unknown to the rivals, and not discoverable with tape measures, had considerable “independent economic value . . . from not being generally known”. A sensible trier

of fact could determine that Lange tried to sell trade secrets. It was his customer's cooperation with the FBI, and not public access to the data, that prevented closing of the sale.†

Thirty months' imprisonment is the sentence Lange is serving. Not much, as sentences go these days, but Lange says it is too high. He protests two decisions that influenced its length: first, the district judge's conclusion that he used special skill, which adds two levels under U.S.S.G. §3B1.3; second, the judge's refusal to deduct two levels for acceptance of responsibility under U.S.S.G. §3E1.1. Appellate review of these contentions is deferential, see 18 U.S.C. §3742(e); *Buford v. United States*, 532 U.S. 59 (2001); *United States v. Gomez*, 24 F.3d 924, 926 (7th Cir. 1994), and the district judge did not abuse his discretion.

The judge concluded that Lange's knowledge as a drafter (he has an associate's degree in graphic design) and his ability to manipulate drawings in AutoCAD were special skills that facilitated the offense. The former enabled Lange to select and lay his hands on commercially valuable data; the latter helped facilitate its sale and concealment. When negotiating for the sale, Lange used AutoCAD to remove all of RAPCO's identifying marks and replace them with the logos and other details of the potential customer, so that the buyer could submit the drawings to the FAA as its own. That manipulation would have made the package more attractive to any buyer and thus facilitated the offense.

† This opinion, the circuit's first encounter with the Economic Espionage Act of 1996, was circulated before release to all active judges under Circuit Rule 40(e). Circuit Judge Ripple favored a hearing en banc.

Lange relies on Application Note 3 to §3B1.3:

“Special skill” refers to a skill not possessed by members of the general public and usually requiring substantial education, training or licensing. Examples would include pilots, lawyers, doctors, accountants, chemists, and demolition experts.

Sure he had training, Lange concedes, but not as extensive as a chemist’s. That cannot be denied; an associate’s degree (and knowledge of even so complex a software package as AutoCAD) can be obtained in less time than a college degree. But the district court did not commit a clear error in finding that Lange had skills “not possessed by members of the general public” (this time “public” *does* mean “general public”!). *United States v. Lewis*, 41 F.3d 1209 (7th Cir. 1994), makes the point. *Lewis* holds that an enhancement under §3B1.3 may be proper for someone whose special skill is ability to drive an 18-wheel truck, making off with the load with which he had been entrusted. Drafting skills, including the use of AutoCAD, are “not possessed by members of the general public”, require time to master, and played a central role in the offense. A mechanical drafter is in the same category as a pilot or demolition expert—for those skills, too, may be learned outside the academy. The enhancement was proper.

As for acceptance of responsibility: this reduction usually rewards a guilty plea, but Lange went to trial. Even on appeal Lange contends that he is not guilty and asks us to reverse his conviction. That does not qualify as acceptance of responsibility. Nor does it fall within the special case, see §3E1.1 Application Note 2, of pleading not guilty only to obtain a ruling on a contested legal issue. Lange argued (and still argues) factual as well as legal innocence. His legal points could have been preserved with a conditional guilty plea on stipulated facts, but instead Lange chose to put the prosecution to its proof.

What is more, he hardly fits the profile of one who has learned his lesson. Lange consulted an attorney before offering RAPCO's data for sale. Counsel told him that he absolutely should not sell the data; armed with that knowledge, Lange went ahead and tried to complete the sale. After being caught, Lange committed new offenses. He was directed by a grand jury subpoena (and required by the civil law) to return the stolen data. He feigned compliance while retaining an electronic copy. Then he tried to persuade a friend who knew the truth to lie to the grand jury. Only when this effort was revealed (the friend turned a damning voice mail message over to the FBI) did Lange finally clean his hard drive of RAPCO's intellectual property. For this escapade Lange received a two-level enhancement for obstructing justice. U.S.S.G. §3C1.1. An obstruction-of-justice enhancement generally, and here, is incompatible with an acceptance-of-responsibility reduction. U.S.S.G. §3E1.1 Application Note 4.

AFFIRMED

RIPPLE, *Circuit Judge*, concurring. I concur in the judgment of the court. I write separately because the panel majority's opinion deals with several matters that are not necessarily raised by this case, and, in my view, it is imprudent to confront these issues prematurely.

The panel majority notes that the Economic Espionage Act, in defining "trade secret," includes as an ingredient that

the information derives independent economic value, actual or potential, from not being generally known

to, and not being readily ascertainable through proper means by, the public[.]

18 U.S.C. § 1839(3)(B). This portion of the definition of a trade secret differs markedly from the definition found in the Uniform Trade Secrets Act. The analogous language, found at section 1(4) of the Uniform Act, provides that the information must

derive[] independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use[.]

Unif. Trade Secrets Act, § 1(4) (amended 1985), 14 U.L.A. 438 (1979).

The panel majority declares that this textual difference is of no significance because the phrase “the public” in the federal statute is simply shorthand for the longer phrase of the Uniform Act. Therefore, the panel majority concludes, “the public” ought to be read “the *economically relevant* public.” (Slip Op. at 7). Because Mr. Lange offered information that was unknown to both competitors and to the general public, there is no reason to confront this issue in this case, and, because the correctness of the panel majority’s reading of the evidence is not self-evident, we ought not to reject out-of-hand the position of the United States when there is no necessity to do so.

The panel majority bases its reading of the federal statute on its conclusion that “[s]ection 1839(3) was derived from the definition of a trade secret in the Uniform Trade Secrets Act.” (Slip Op. at 6). An examination of the House Report accompanying the statute describes, however, a somewhat more nuanced relationship between the two definitions. Notably, the Report states that the definition of “trade secret” in the federal statute is “based largely” on the definition of that term in the Uniform Trade Se-

crets Act. H.R. Rep. No. 104-788, at 12 (1996). The report goes on to say in the paragraphs immediately following that “information which is generally known to the public, or which the public can readily ascertain through proper means, does not satisfy the definition of trade secret under this section.” *Id.* at 13.

Our normal approach to statutory interpretation is to assume that Congress intended what it wrote. Here, the words of the statute are clear on their face. Moreover, the pertinent legislative history supports reliance on the plain wording. *Cf. Griffin v. Oceanic Contractors, Inc.*, 458 U.S. 564, 574 (1982) (“Resort to the legislative history, therefore, merely confirms that Congress intended the statute to mean exactly what its plain language says.”). Congress used the Uniform Act’s definition of “trade secret” as a guide, but it did not adopt it. Instead, Congress made its own choices as to those aspects of the Uniform Act’s definition that ought to be adopted and those that needed alteration before incorporation into the federal statute. I see no reason to reject so swiftly and gratuitously the plain wording of the statute, the supportive legislative history,¹ the interpretation of the Court of Appeals for the Third Circuit in *United States v. Hsu*, 155 F.3d 189, 196-97 (3d Cir. 1998), and the interpretation of the Executive Branch set forth in the Government’s brief.

I would also defer announcing any limitations on the law of attempt as it applies to the Economic Espionage Act in advance of the necessity of doing so. The considered judgment of another circuit to the contrary particularly

¹ I note that legislative history is employed here merely to confirm the plain wording of the statutory language in the face of a reading that can find no justification in the plain wording, the legislative history or any other recognized tool of statutory construction.

counsels restraint in this respect. *See Hsu*, 155 F.3d at 198-203. In this case, there is no question that the information Mr. Lange offered for sale was a trade secret. We therefore need not decide whether a defendant can be found guilty of an attempt when no such secret exists.

For these reasons, I concur in the judgment, but must respectfully decline from joining the panel discussion of matters not necessary for decision today, especially when the correctness of those pronouncements is questionable.

A true Copy:

Teste:

*Clerk of the United States Court of
Appeals for the Seventh Circuit*